

**WHAT IS CLAIMED IS:**

1. A cipher key producing method comprising:

a step of reading a first proper information out from a recording medium wherein the first proper information is inherent to the recording medium and discriminates the recording medium recorded with program information from other recording mediums;

a step of reading out a second proper information inherent to a reproduction apparatus from a memory means of the reproduction apparatus wherein the second proper information discriminates the reproduction apparatus from other reproduction apparatuses for reading out the program information of the recording medium;

a step of reading out from the recording medium a specific information which specifies at least one preferred information of the program information; and

a step of producing at least one cipher key for reading out said one preferred program wherein the cipher key is produced through a calculation process according to a predetermined algorithm by using said first and second proper information and the specific information.

2. A cipher key producing method comprising:

a step of reading a proper information out from a recording medium wherein the proper information is inherent to the recording medium and discriminates the recording medium recorded with program information from other

recording mediums;

a step of reading out from the recording medium a specific information which specifies at least one preferred information of the program information; and

a step of producing at least one cipher key for reading out said one preferred information wherein the cipher key is produced through a calculation process according to a predetermined algorithm by using said proper information and the specific information.

3. A cipher key producing method comprising:

a step of reading a proper information out from a recording medium wherein the proper information is inherent to the recording medium and discriminates the recording medium recorded with program information from other recording mediums;

a step of reading out from the recording medium a specific information which specifies at least one preferred information of the program information; and

a step of producing at least one cipher key for reading out said one preferred information wherein the cipher key is produced through a calculation process according to a predetermined algorithm by using said proper information.

4. A cipher key producing method comprising:

a step of reading out a proper information inherent to a reproduction apparatus from a memory means of the reproduction apparatus wherein the proper information

discriminates the reproduction apparatus from other reproduction apparatuses for reading out the program information of the recording medium;

a step of reading out from the recording medium a specific information which specifies at least one preferred information of the program information; and

a step of producing at least one cipher key for reading out said one preferred information wherein the cipher key is produced through a calculation process according to a predetermined algorithm by using said proper information and the specific information.

5. A cipher key producing method comprising:

a step of reading a proper information out from a recording medium wherein the proper information is inherent to the recording medium and discriminates the recording medium recorded with program information from other recording mediums;

a step of assigning a code number by a user;

a step of receiving the code number from the user; and

a step of producing at least one cipher key for reading a program information out from the recording medium wherein the cipher key is produced through a calculation process according to a predetermined algorithm by using said proper information and the code number.

6. A cipher key producing method comprising:

a step of reading a proper information out from a

recording medium wherein the proper information is inherent to the recording medium and discriminates the recording medium recorded with program information from other recording mediums;

a step of assigning a code number by a user;

a step of receiving the code number from the user;

a step of reading out from the recording medium a specific information which specifies at least one preferred information of the program information assigned by the user; and

a step of producing a cipher key for reading out said one preferred information wherein the cipher key is produced through a calculation process according to a predetermined algorithm by using said proper information, and the code number, and the specific information.

7. A cipher key producing method, wherein the cipher key is recorded in other area than a main information area of an optical disc by a request of a user and utilized for reproducing main information comprising:

a step of assigning a discrimination sentence which is utilized for reproducing main information recorded in an optical disc by the user;

a step of selecting a specific information which specifies at least one preferred information of the main information by the user;

a step of transmitting said discrimination sentence and the specific information to a software house; and

a step of producing a cipher key for reading out said one preferred information wherein the cipher key is produced through a calculation process according to a predetermined algorithm by using said discrimination sentence and the specific information.

8. A cipher key writing method comprising:

a step of reading a proper information out from a recording medium wherein the proper information is inherent to the recording medium and discriminates the recording medium recorded with program information from other recording mediums;

a step of assigning a code number by a user;

a step of receiving the code number from the user;

a step of producing a cipher key for reading out a program information from the recording medium wherein the cipher key is produced through a calculation process according to a predetermined algorithm by using said proper information and the code number; and

a step of writing the cipher key in one of a continuing area and an adjoining area, wherein said continued area continues to an area and said adjoining area is independent of said continuing area and adjoins said area in which the proper information of the recording medium is recorded, and a magnetic recording area which is provided in the recording medium.

9. A cipher key writing method in accordance with claim 8,

comprising:

a step of reading a proper information out from a recording medium wherein the proper information is inherent to the recording medium and discriminates the recording medium recorded with program information from other recording mediums;

a step of assigning a code number by a user;

a step of receiving the code number from the user;

a step of reading out from the recording medium a specific information which specifies at least one preferred information of the program information assigned by the user; and

a step of producing a cipher key for reading out a program information from the recording medium wherein the cipher key is produced through a calculation process according to a predetermined algorithm by using said proper information, the code number, and the specific information; and

a step of writing the cipher key in one of a continuing area and an adjoining area, wherein said continued area continues to an area and said adjoining area is independent of said continuing area and adjoins said area in which the proper information of the recording medium is recorded, and a magnetic recording area which is provided in the recording medium.

10. A cipher key writing system comprising:

readout means for reading a proper information out from

a recording medium wherein the proper information is inherent to the recording medium and discriminates the recording medium recorded with program information from other recording mediums;

reading means for reading a code number arbitrarily assigned by a user from the recording medium;

transmission means for transmitting said proper information of the recording medium and the code number to a cipher key producing device;

receiving means for receiving a cipher key from the cipher key producing device; and

add-on writing means for writing the cipher key in one of a continuing area and an adjoining area, wherein said continuing area continues to an area and said adjoining area is independent of said continuing area and adjoins said area in which the proper information of the recording medium is recorded, and a magnetic recording area which is provided in the recording medium.

11. A cipher key writing system comprising:

readout means for reading a proper information out from a recording medium wherein the proper information is inherent to the recording medium and discriminates the recording medium recorded with program information from other recording mediums;

first reading means for reading a code number arbitrarily assigned by a user;

second reading means for reading out from the recording

medium a specific information which specifies at least one preferred information of the program information;

transmission means for transmitting said proper information of the recording medium and the code number to a cipher key producing device;

receiving means for receiving a cipher key from the cipher key producing device; and

add-on writing means for writing the cipher key in one of a continuing area and an adjoining area, wherein said continuing area continues to an area and said adjoining area is independent of said continuing area and adjoins said area in which the proper information of the recording medium is recorded, and a magnetic recording area which is provided in the recording medium.

12. An optical disc reproduction method for reproducing program information of an optical disc by a reproduction apparatus wherein the optical disc is previously recorded with the program information and an optical disc ID which discriminates the optical disc from other optical discs comprising:

a step of reading out the optical disc ID from the optical disc;

a step of reading out a drive ID inherent to a reproduction apparatus from a memory means for the reproduction apparatus;

a step of reading out from the optical disc a specific information which specifies at least one preferred



information of the program information;

a step of producing at least one cipher key for reading out said one preferred program in accordance with the optical disc ID, and the drive ID, and the specific information; and

a step of permitting reproduction of said one preferred program of the program information recorded in the optical disc by using said cipher key.

13. An optical disc reproduction method in accordance with claim 12, wherein the step of permitting reproduction of said one preferred information is further comprised of a calculation process utilizing one of the optical disc ID and the drive ID, and said method is further comprised of a step of judging whether the title key is previously assigned to said one preferred information of the program information.

14. An optical disc reproduction method for reproducing program information of an optical disc by a reproduction apparatus wherein the optical disc is previously recorded with the program information and an optical disc ID which discriminates the optical disc from other optical discs comprising:

a step of reading out the optical disc ID from the optical disc;

a step of reading out from the optical disc a specific information which specifies at least one preferred

information of the program information;

a step of producing at least one cipher key for reading out said one preferred information from the optical disc ID and the specific information; and

a step of permitting reproduction of said one preferred information of the program information recorded in the optical disc by using said cipher key.

15. An optical disc reproduction method in accordance with claim 14, wherein the step of permitting reproduction of said one preferred information is further comprised of a calculation process using the optical disc ID, and is further comprised of a step of judging whether the title key is previously assigned to said preferred information of the program information.

16. An optical disc reproduction method for reproducing program information of an optical disc by a reproduction apparatus wherein the optical disc is previously recorded with the program information and an optical disc ID which discriminates the optical disc from other optical discs comprising:

a step of reading out the optical disc ID from the optical disc;

a step of producing at least one cipher key for reading out at least one program information recorded in the optical disc from the optical disc ID; and

a step of permitting reproduction of said program

information recorded in the optical disc by using said cipher key.

17. An optical disc reproduction method for reproducing program information of an optical disc by a reproduction apparatus wherein the optical disc is previously recorded with the program information comprising:

a step of reading out a drive ID inherent to a reproduction apparatus from a memory means for the reproduction apparatus;

a step of reading out from the optical disc a specific information which specifies at least one preferred information of the program information;

a step of producing at least one cipher key for reading out said preferred information from the drive ID and the specific information; and

a step of permitting reproduction of said preferred information recorded in the optical disc by using the cipher key.

18. An optical disc reproduction method in accordance with claim 17, wherein the step of permitting reproduction of said one preferred information is further comprised of using the drive ID additionally, and said method is further comprised of a step of judging whether the title key is previously assigned to said one preferred information of the program information.

23. An information reproduction method for reproducing program information of a recording medium by a reproduction apparatus wherein the recording medium is previously recorded with the program information and a proper information which is inherent to the recording medium and discriminates the recording medium from other recording mediums comprising:

a step of reading out the proper information from the recording medium wherein the proper information discriminates the recording mediums;

a step of reading out a cipher key recorded in one of a continuing area and of an adjoining area, wherein said continuing area continues to an area and said adjoining area is independent of said continuing area and adjoins said area in which said proper information of the recording medium is recorded;

a step of producing a code number which is utilized to reproduce the program information recorded in the recording medium using said proper information and the cipher key;

a step of permitting reproduction of the program information recorded in the recording medium by using said code number.

20. An information reproduction method for reproducing program information of a recording medium by a reproduction apparatus wherein the recording medium is previously recorded with the program information and a proper information which is inherent to the recording medium and

discriminates the recording medium from other recording mediums comprising:

a step of reading out the proper information from the recording medium;

a step of reading out a cipher key recorded in one of a continuing area and of an adjoining area, wherein said continuing area continues to an area and said adjoining area is independent of said continuing area and adjoins said area in which said proper information of the recording medium is recorded;

a step of reading out from the recording medium a specific information which specifies at least one preferred information of the program information;

a step of producing a code number which is utilized to reproduce said preferred information using said proper information, and the cipher key, and the specific information; and

a step of permitting reproduction of said preferred information recorded in the recording medium by using said code number.

21. An information reproduction method for reproducing program information of a recording medium by a reproduction apparatus wherein the recording medium is previously recorded with the program information and a proper information which is inherent to the recording medium and discriminates the recording medium from other recording mediums comprising:

a step of reading out the proper information medium from the recording medium;

a step of reading out a cipher key recorded in one of a continuing area and of an adjoining area, wherein said continuing area continues to an area and said adjoining area is independent of said continuing area and adjoins said area in which said proper information of the recording medium is recorded;

a step of reading a code number which is inputted by a user;

a step of producing a specific information which specifies at least one preferred information of the program information recorded in the recording medium using said proper information, the cipher key, and the code number; and

a step of permitting reproduction of said one preferred information of the program information recorded in the recording medium by using said specific information.

22. An information reproduction method for reproducing program information of a recording medium by a reproduction apparatus wherein the recording medium is previously recorded with the program information and a proper information which is inherent to the recording medium and discriminates the recording medium from other recording mediums comprising:

a step of reading out the proper information from the recording medium;

a step of reading out a cipher key recorded in a

magnetic recording area which is provided in the recording medium;

a step of producing a code number which is utilized to reproduce the program information from said proper information and the cipher key; and

a step of permitting reproduction of the program information recorded in the recording medium by using said code number.

23. An information reproduction method for reproducing program information of a recording medium by a reproduction apparatus wherein the recording medium is previously recorded with the program information and a proper information which is inherent to the recording medium and discriminates the recording medium from other recording mediums comprising:

a step of reading out the proper information from the recording medium;

a step of reading out a cipher key recorded in a magnetic recording area which is provided in the recording medium;

a step of reading out from the recording medium a specific information which specifies at least one preferred information of the program information;

a step of producing a code number which is utilized to reproduce at least one preferred information of the program

information from said proper information, the cipher key, and the specific information; and

a step of permitting reproduction of said one preferred information recorded in the recording medium by using said code number.

24. An information reproduction method for reproducing program information of a recording medium by a reproduction apparatus wherein the recording medium is previously recorded with the program information and a proper information which is inherent to the recording medium and discriminates the recording medium from other recording mediums comprising:

a step of reading out the proper information from the recording medium;

a step of reading out a cipher key recorded in a magnetic recording area which is provided in the recording medium;

a step of reading a code number which is inputted by a user;

a step of producing a specific information which specifies at least one preferred information of the program information recorded in the recording medium from said proper information, the cipher key, and the code number; and

a step of permitting reproduction of said one preferred information of the program information by using said specific information.



25. An information reproduction method comprising:

a step of obtaining a first discrimination sentence by reading out a cipher key which is recorded in other area than program information area of an optical disc;

a step of inputting a second discrimination sentence by a user;

a step of comparing the second discrimination sentence with the first discrimination sentence; and

a step of reproducing preferred program information designated by the cipher key when the second discrimination sentence agrees with the first discrimination sentence.

26. An optical disc reproduction permitting method for a reproduction of program information of an optical disc by a user with a reproduction apparatus wherein the optical disc is previously recorded with the program information and an optical disc ID which discriminates the optical disc from other optical discs, and a supplier of the optical disc judges whether reproduction of the program information by the user is permissible, said method comprising:

a step of reading out said optical disc ID from the optical disc;

a step of reading out from a memory device of a reproduction apparatus a drive ID which is inherent to the reproduction apparatus;

a step of reading out a specific information which is inherent to the program information and specifies at least one preferred information of the program information

recorded in the optical disc;

a step of receiving said optical disc ID, and the proper drive ID, and the specific information;

a step of producing at least one cipher key for reproducing said one preferred information from said optical disc ID, the drive ID, and the specific information; and

a step of transmitting said cipher key to the reproduction apparatus for permitting reproduction of said one preferred information of the program information;

27. An optical disc reproduction permitting method for a reproduction of program information of an optical disc by a user with a reproduction apparatus wherein the optical disc is previously recorded with the program information and an optical disc ID which discriminates the optical disc from other optical discs, and a supplier of the optical disc judges whether reproduction of the program information by the user is permissible, said method comprising:

a step of reading out said optical disc ID from the optical disc;

a step of reading out a specific information which is inherent to the program information and specifies at least one preferred information of the program information recorded in the optical disc;

a step of receiving said optical disc ID and the specific information;

a step of producing at least one cipher key for

reproduction of the preferred information from said optical disc ID and the specific information; and

a step of transmitting said cipher key to the reproduction apparatus for permitting reproduction of said one preferred information of the program information.

28. An optical disc reproduction permitting method for a reproduction of program information of an optical disc by a user with a reproduction apparatus wherein the optical disc is previously recorded with the program information and an optical disc ID which discriminates the optical disc from other optical discs, and a supplier of the optical disc judges whether reproduction of the program information by the user is permissible, said method comprising:

a step of reading out said optical disc ID from the optical disc;

a step of receiving said optical disc ID;

a step of producing at least one cipher key for reproduction of at least one preferred information of the program information from said optical disc ID; and

a step of transmitting said cipher key to said one reproduction apparatus for permitting reproduction of the preferred information of the program information recorded in the optical disc.

29. An optical disc reproduction permitting method for a reproduction of program information of an optical disc by a user with a reproduction apparatus wherein the optical disc

is previously recorded with the program information and an optical disc ID which discriminates the optical disc from other optical discs, and a supplier of the optical disc judges whether reproduction of the program information by the user is permissible, said method comprising:

a step of reading out from a memory device of a reproduction apparatus a proper drive ID which is inherent to the reproduction apparatus;

a step of reading out a specific information which is inherent to the program information and specifies at least one preferred information of the program information recorded in the optical disc;

a step of receiving said proper drive ID and the specific information;

a step of producing at least one cipher key for reproduction of the preferred information using said drive ID and the specific information; and

a step of transmitting said cipher key to the reproduction apparatus for permitting reproduction of said one preferred information of the program information recorded in the optical disc.

30. A information reproduction permitting method for a reproduction of program information of a recording medium by a user with a reproduction apparatus wherein the recording medium is previously recorded with the program information and a proper information which is inherent to the recording medium and discriminates the recording medium

from other recording mediums, and a supplier of the optical disc judges whether reproduction of the program information by the user is permissible, said method comprising:

a step of inputting a code number by the user;

a step of reading out from the recording medium a specific information which specifies at least one preferred information of the program information;

a step of receiving, from the reproduction apparatus, said proper information read out from the recording medium and the code number;

a step of producing a cipher key for reproducing said one preferred information using said proper information, the code number, and the specific information; and

a step of transmitting said cipher key to the reproduction apparatus for permitting reproduction of said one preferred information of the program information recorded in the recording medium.

31. An optical disc reproduction apparatus for reproducing program information of an optical disc wherein the optical disc is previously recorded with the program information and an optical disc ID which is inherent to the optical disc and discriminates the optical disc from other optical discs comprising:

first readout means for reading out said optical disc ID from the optical disc;

memory means for storing a drive ID inherent to the optical disc reproduction apparatus;

second readout means for reading out the drive ID from the memory means;

third readout means for reading out from the optical disc a specific information which specifies at least one preferred information of the program information;

transmission means for transmitting said optical disc ID, the drive ID, and the specific information to a supplier of the optical disc;

reception means for receiving at least one cipher key which is transmitted from the supplier of the optical disc;

calculation means for calculating a title key through a calculation process using the cipher key;

judgement means for judging whether the title key is previously assigned to said one preferred information of the program information; and

permission means for permitting reproduction of said one preferred information of the program information when said title key is judged to be previously assigned to said one preferred information.

32. An optical disc reproduction apparatus for reproducing program information of an optical disc wherein the optical disc is previously recorded with the program information and an optical disc ID which is inherent to the optical disc and discriminates the optical disc from other optical discs comprising:

first readout means for reading out said optical disc ID from the optical disc;

second readout means for reading out from the optical disc a specific information which specifies at least one preferred information of the program information;

transmission means for transmitting said optical disc ID and the specific information to a supplier of the optical disc;

reception means for receiving at least one cipher key which is transmitted from the supplier of the optical disc;

calculation means for calculating a title key through a calculation process by using the cipher key;

judgement means for judging whether the title key is previously assigned to said one preferred information of the program information; and

permission means for permitting reproduction of the preferred information of the program information when said title key is judged to be previously assigned to said one preferred information.

33. An optical disc reproduction apparatus for reproducing program information of an optical disc wherein the optical disc is previously recorded with the program information and an optical disc ID which is inherent to the optical disc and discriminates the optical disc from other optical discs comprising:

first readout means for reading out said optical disc ID from the optical disc;

second readout means for reading out from the optical disc a specific information which specifies at least one

preferred information of the program information;

transmission means for transmitting said optical disc ID read out from the optical disc to a supplier of the optical disc;

reception means for receiving at least one cipher key which is transmitted from the supplier of the optical disc;

calculation means for calculating a title key through a calculation process by using the cipher key;

judgement means for judging whether the title key is previously assigned to said one preferred information of the program information; and

permission means for permitting reproduction of said one preferred information of the program information when said title key is judged to be previously assigned to said preferred information.

34. An optical disc reproduction apparatus for reproducing program information of an optical disc wherein the optical disc is previously recorded with the program information and an optical disc ID which is inherent to the optical disc and discriminates the optical disc from other optical discs comprising:

memory means for storing a drive ID inherent to the optical disc reproduction apparatus;

first readout means for reading out said drive ID from the memory means;

second readout means for reading out from the optical disc a specific information which specifies at least one



preferred information of the program information;

transmission means for transmitting said drive ID and the specific information to a supplier of the optical disc;

reception means for receiving at least one cipher key which is transmitted from the supplier of the optical disc;

calculation means for calculating a title key through a calculation process by using said cipher key;

judgement means for judging whether the title key is previously assigned to said one preferred information of the program information; and

permission means for permitting reproduction of said one preferred information of the program information when said title key is judged to be previously assigned to said one preferred information.

35. An information reproduction apparatus for reproducing program information of a recording medium wherein the recording medium is previously recorded with the program information and a proper information which is inherent to the recording medium and discriminates the recording medium from other recording mediums comprising:

first readout means for reading out from the recording medium said proper information;

second readout means for reading out a cipher key recorded in one of a continuing area and an adjoining area, wherein said continuing area continues to an area and said adjoining area is independent of said continuing area and adjoins said area in which said proper information of

the recording medium is recorded;

production means for producing a code number which is utilized to reproduce the program information from said proper information and the cipher key; and

permission means for permitting reproduction of the program information by using said code number.

36. An information reproduction apparatus for reproducing program information of a recording medium wherein the recording medium is previously recorded with the program information and a proper information which is inherent to the recording medium and discriminates the recording medium from other recording mediums comprising:

first readout means for reading out from the recording medium said proper information;

second readout means for reading out a cipher key recorded in one of a continuing area and an adjoining area, wherein said continuing area continues to an area and said adjoining area is independent of said continuing area and adjoins said area in which said proper information of the recording medium is recorded;

third readout means for reading out from the recording medium a specific information which specifies at least one preferred information of the program information;

production means for producing a code number which is utilized to reproduce the preferred information of the program information from said proper information, the cipher key, and the specific information; and

permission means for permitting reproduction of said one preferred information of the program information by using said code number.

37. An information reproduction apparatus for reproducing program information of a recording medium wherein the recording medium is previously recorded with the program information and a proper information which is inherent to the recording medium and discriminates the recording medium from other recording mediums comprising:

first readout means for reading out said proper information from the recording medium;

second readout means for reading out a cipher key recorded in a magnetic recording area which is provided in the recording medium;

production means for producing a code number which is utilized to reproduce the program information recorded in the recording medium from said proper information and the cipher key; and

permission means for permitting reproduction of the program information recorded in the recording medium by using said code number.

38. An information reproduction apparatus for reproducing program information of a recording medium wherein the recording medium is previously recorded with the program information and a proper information which is inherent to the recording medium and discriminates the recording medium

from other recording mediums comprising:

first readout means for reading out said proper information from the recording medium;

second readout means for reading out a cipher key recorded in a magnetic recording area which is provided in the recording medium;

third readout means for reading out from the recording medium a specific information which specifies at least one preferred information of the program information;

production means for producing a code number which is utilized to reproduce said one preferred information by using said proper information, the cipher key, and the specific information; and

permission means for permitting reproduction of the program information recorded in the recording medium by using said code number.

39. An information reproduction apparatus for reproducing program information recorded in an optical disc wherein the optical disc is recorded with the program information and a cipher key which is recorded in an area other than program information area of the optical disc comprising:

input means for inputting a previously assigned first discrimination sentence;

reproduction means for reproducing a content in the optical disc; and

reproduction control means for controlling reproduction

of said program information of the optical disc by the reproduction means wherein the previously assigned first discrimination sentence inputted by the input means is compared with a second discrimination sentence obtained from a cipher key which is read out from the optical disc by the reproduction means.

40. An optical disc comprising:

a first area optically recorded with a proper information which is inherent to the optical disc and discriminates the optical disc from other optical discs; and

a second area which is one of a continued area and an adjoining area wherein said continued area continues to the first area and wherein said adjoining area is independent of said continued area and adjoins said first area, and wherein a recording format of the second area is the same as that of the first area, said second area is optically recorded with a cipher key reading out the program information from the optical disc, wherein the cipher key is produced through a calculation process according to a predetermined algorithm by using said proper information, an arbitrary code number to be determined by a user, and a specific information which specifies at least one preferred information of the program information recorded in the optical disc.

41. An optical disc comprising:

a first area optically recorded with a proper information which is inherent to the optical disc and discriminates the optical disc from other optical discs; and

a second area of being magnetically recorded with a cipher key so as to read out the program information from the optical disc wherein the cipher key is produced through a calculation process according to a predetermined algorithm by using said proper information of the optical disc, a arbitrary code number, and a specific information which specifies at least one preferred information of the program information recorded in the optical disc.

42. An optical disc comprising:

a first area being recorded with program information; and

a second area recorded with a cipher key wherein the second area is independent of the first area containing the program information, and wherein said cipher key is produced by a method comprising:

a step of assigning a discrimination sentence which is utilized for reproducing main information recorded in an optical disc by the user;

a step of selecting a specific information which specifies at least one preferred information of the main information by the user;

a step of transmitting said discrimination sentence and the specific information to a software house; and

a step of producing a cipher key for reading out said

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	